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08/325,145 10/20/94 EBERHARD

J 69568/102

EXAMINER

DEL RUSSO, G

E6M1/0226

ART UNIT

PAPER NUMBER

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2613

DATE MAILED:

02/26/96

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

☒ This application has been examined ☐ Responsive to communication filed on _____ ☐ This action is made final.

A shortened statutory period for response to this action is set to expire 9 month(s), 0 days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- ☒ Notice of References Cited by Examiner, PTO-892.
- ☒ Notice of Draftsman's Patent Drawing Review, PTO-948.
- ☐ Notice of Art Cited by Applicant, PTO-1449.
- ☐ Notice of Informal Patent Application, PTO-152.
- ☐ Information on How to Effect Drawing Changes, PTO-1474.
- ☐ _____

Part II SUMMARY OF ACTION

1. ☒ Claims 1-20 are pending in the application.

Of the above, claims _____ are withdrawn from consideration.

2. ☐ Claims _____ have been cancelled.

3. ☐ Claims 8, 19 are allowed.

4. ☐ Claims 1-7, 9-18, 20 are rejected.

5. ☐ Claims _____ are objected to.

6. ☐ Claims _____ are subject to restriction or election requirement.

7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.

8. ☐ Formal drawings are required in response to this Office action.

9. ☐ The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).

10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on _____, has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).

11. ☐ The proposed drawing correction, filed _____, has been ☐ approved; ☐ disapproved (see explanation).

12. ☐ Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. _____; filed on _____.

13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.

14. ☐ Other

EXAMINER'S ACTION

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1. The following is a quotation of the first paragraph of 35 U.S.C. § 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification is objected to under 35 U.S.C. § 112, first paragraph, as failing to provide an enabling disclosure.

The specification and drawings fail to enable the methods claimed in claims 1, 12 and 20.

Claims 1 and 12 recite scanning a volume to determine a single property, identifying contiguous groups of voxels having the single property, and identifying groups having a specified "characteristic." As to, "characteristic" it is not clear whether this means the "property" or something derived from it or something independent of it. None of the above cases is enabled, as follows.

The disclosure explicitly delineates steps of a process in which three properties are evaluated in a specific order to identify an object having a known and uniform density (such as an explosive or an air volume created in a composite material by delamination). Densities of a set of voxels are first measured and used to determine the existence of a contiguous volume of uniform density (page 7, lines 19-25); volume of the contiguous region is next used to determine the size of a region of interest (page 7, lines 26-37); and the mass of the region is finally calculated from the volume and density and used to determine if the object is of sufficient interest (page 7, line 37 to page 8, line 4).

As to claim 20, this claim is not enabled because it fails to recite the complete method as taught. As explained above the

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method requires determination of both volume and mass, in that order, to operate. Claim 20 recites determining "at least one of the volume and the mass" and therefore is incomplete since either property alone is insufficient to perform the invention, and further since the step of "comparing at least one of the volume and the mass... to at least one threshold" (lines 11-13) encompasses permutations not disclosed.

2. Claims 1-7, 12-18 and 20 are rejected under 35 U.S.C. § 112, first paragraph, for the reasons set forth in the objection to the specification.

3. Claims 1-7 and 9-18 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1 and 12 "to help ascertain the presence or absence of an object" (lines 1-2) is vague and indefinite. It is not clear what is meant by "help" since the disclosure is directed to a complete method of detecting explosives or other objects. Also, there is no teaching as to how the absence of an object is confirmed. Failure to detect the presence of an object does not require that the object is absent.

In claim 9, "further inspecting" is unclear: What is further inspected, the three-dimensional volume? densities? mass? Also it is not clear at what point in the method of claim 8 this takes place.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 4, 12 and 15 are rejected under 35 U.S.C. § 102(b) as being anticipated by Cline et al.

As to claims 1 and 12, Cline teaches a method and apparatus for detecting the presence of an object by radiation scanning (col 5, lines 36-40), identifying voxels having similar values of a property to identify a contiguous group (col 6, lines 4-51) and identifying the group as an object based on a characteristic (col 4, lines 34-37; also col 5, line 65 to col 6, line 3).

As to claims 4 and 15, it is inherent in computer axial tomography that scanning includes x-ray scanning (col 5, lines 37-38).

6. The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

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7. Claims 2-3, 5-7, 13-14, 16-18 and 20 are rejected under 35 U.S.C. § 103 as being unpatentable over the combination of Cline et al and Annis.

As to claims 2, 5, 6, 13, 16, 17 and 20, Annis teaches scanning a volume with x-rays to detect the presence of explosives (col 1, lines 63 to col 2, line 4). It would have been obvious to use the x-ray system of Cline et al to scan for explosives since Annis teaches that they exhibit recognizable characteristics of density, mass or volume (col 1, lines 51-60).

As to claims 7 and 18, Annis teaches scanning luggage for explosives (figure 2, item 40). It would have been obvious to use the x-ray system of Cline et al to scan luggage for explosives since it is a well-recognized problem that explosives may be found in luggage.

As to claims 3 and 14, it would have been obvious to use the x-ray system of Cline et al to scan for delamination of a composite material since it is known that empty spaces caused by delamination are essentially uniform in density, and Annis teaches detecting objects which exhibit recognizable characteristics of density, mass or volume (col 1, lines 51-60).

8. Claims 8 and 19 are allowable over the prior art of record. The prior art does not teach or suggest the steps of claims 8 and 19 of measuring densities of a set of voxels, determining the existence of a contiguous volume of uniform density, comparing the volume of the contiguous region to a first threshold, if the threshold is exceeded calculating the mass of the region from the volume and density and comparing the mass to a second threshold to determine if the object is of sufficient interest (ie if the second threshold is exceeded).

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9. Claims 9-11 would be allowable if rewritten or amended to overcome the rejection under 35 U.S.C. § 112. These claims depend from claim 8 and are allowable over the prior art of record for the same reason.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bartle and Stein teach baggage inspection. Crawford (4,903,202 and 4,905,148) teaches labeling connected regions in tomographic data.

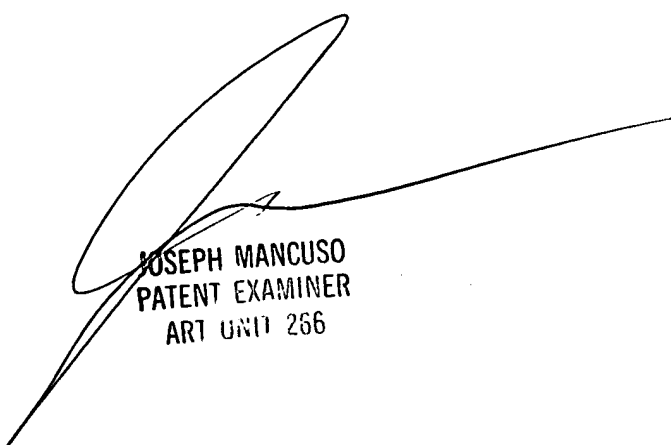
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gerard Del Rosso whose telephone number is (703) 305-4948.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-8576.

The group fax number is (703) 308-6606.

gd

February 11, 1996



JOSEPH MANCUSO
PATENT EXAMINER
ART UNIT 266